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Domains, NIH
cDNA clone, Links

☐ 1: [AAH95495](#). Reports Somatostatin rece...[gi:66267323]

Comment Features Sequence

LOCUS AAH95495 369 aa linear PRI 25-JUL-2005
DEFINITION Somatostatin receptor 2 [Homo sapiens].
ACCESSION AAH95495
VERSION AAH95495.1 GI:66267323
DBSOURCE accession [BC095495.1](#)
KEYWORDS MGC.
SOURCE Homo sapiens (human)
ORGANISM [Homo sapiens](#)
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
Hominidae; Homo.
REFERENCE 1 (residues 1 to 369)
AUTHORS Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
Hopkins,R.F., Jordan,H., Moore,T., Max,S.I., Wang,J., Hsieh,F.,
Diatchenko,L., Marusina,K., Farmer,A.A., Rubin,G.M., Hong,L.,
Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
McKernan,K.J., Malek,J.A., Gunaratne,P.H., Richards,S.,
Worley,K.C., Hale,S., Garcia,A.M., Gay,L.J., Hulyk,S.W.,
Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
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Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
CONSRTM Mammalian Gene Collection Program Team
TITLE Generation and initial analysis of more than 15,000 full-length
human and mouse cDNA sequences
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
PUBMED [12477932](#)
REFERENCE 2 (residues 1 to 369)
AUTHORS .
CONSRTM NIH MGC Project
TITLE Direct Submission
JOURNAL Submitted (06-MAY-2005) National Institutes of Health, Mammalian
Gene Collection (MGC), Bethesda, MD 20892-2590, USA

REMARK NIH-MGC Project URL: <http://mgc.nci.nih.gov>
 COMMENT Contact: MGC help desk
 Email: cgapbs-r@mail.nih.gov
 Tissue Procurement: Dr. Michael Brownstein
 cDNA Library Preparation: Michael Brownstein / Ted Usdin
 Laboratory
 cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
 DNA Sequencing by: Sequencing Group at the Stanford Human Genome
 Center, Stanford University School of Medicine, Stanford, CA 94305
 Web site: <http://www-shgc.stanford.edu>
 Contact: (Dickson, Mark) mcd@paxil.stanford.edu
 Dickson, M., Schmutz, J., Grimwood, J., Rodriguez, A., and Myers,
 R. M.

Clone distribution: MGC clone distribution information can be found
 through the I.M.A.G.E. Consortium/LLNL at: <http://image.llnl.gov>
 Series: IRAK Plate: 219 Row: a Column: 24
 This clone was selected for full length sequencing because it
 passed the following selection criteria: matched mRNA gi: 44890054.
 Method: conceptual translation.



FEATURES Location/Qualifiers
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☐ 1: [AAH19610](#). Reports Somatostatin rece...[gi:18043109]

Comment Features Sequence

LOCUS AAH19610 369 aa linear PRI 29-JUN-2004
 DEFINITION Somatostatin receptor 2 [Homo sapiens].
 ACCESSION AAH19610
 VERSION AAH19610.1 GI:18043109
 DBSOURCE accession [BC019610.1](#)
 KEYWORDS MGC.
 SOURCE Homo sapiens (human)
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
 Hominidae; Homo.
 REFERENCE 1 (residues 1 to 369)
 AUTHORS Strausberg,R.L., Feingold,E.A., Grouse,L.H., Derge,J.G.,
 Klausner,R.D., Collins,F.S., Wagner,L., Shenmen,C.M., Schuler,G.D.,
 Altschul,S.F., Zeeberg,B., Buetow,K.H., Schaefer,C.F., Bhat,N.K.,
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 Stapleton,M., Soares,M.B., Bonaldo,M.F., Casavant,T.L.,
 Scheetz,T.E., Brownstein,M.J., Usdin,T.B., Toshiyuki,S.,
 Carninci,P., Prange,C., Raha,S.S., Loquellano,N.A., Peters,G.J.,
 Abramson,R.D., Mullahy,S.J., Bosak,S.A., McEwan,P.J.,
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 Villalon,D.K., Muzny,D.M., Sodergren,E.J., Lu,X., Gibbs,R.A.,
 Fahey,J., Helton,E., Kettelman,M., Madan,A., Rodrigues,S.,
 Sanchez,A., Whiting,M., Madan,A., Young,A.C., Shevchenko,Y.,
 Bouffard,G.G., Blakesley,R.W., Touchman,J.W., Green,E.D.,
 Dickson,M.C., Rodriguez,A.C., Grimwood,J., Schmutz,J., Myers,R.M.,
 Butterfield,Y.S., Krzywinski,M.I., Skalska,U., Smailus,D.E.,
 Schnerch,A., Schein,J.E., Jones,S.J. and Marra,M.A.
 TITLE Generation and initial analysis of more than 15,000 full-length
 human and mouse cDNA sequences
 JOURNAL Proc. Natl. Acad. Sci. U.S.A. 99 (26), 16899-16903 (2002)
 PUBMED [12477932](#)
 REFERENCE 2 (residues 1 to 369)
 AUTHORS Strausberg,R.
 TITLE Direct Submission
 JOURNAL Submitted (19-DEC-2001) National Institutes of Health, Mammalian
 Gene Collection (MGC), Cancer Genomics Office, National Cancer
 Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
 USA

REMARK NIH-MGC Project URL: <http://mgc.nci.nih.gov>
 COMMENT Contact: MGC help desk
 Email: cgapbs-r@mail.nih.gov
 Tissue Procurement: ATCC
 cDNA Library Preparation: Life Technologies, Inc.
 cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
 DNA Sequencing by: Baylor College of Medicine Human Genome Sequencing Center
 Center code: BCM-HGSC
 Web site: <http://www.hgsc.bcm.tmc.edu/cdna/>
 Contact: amg@bcm.tmc.edu
 Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Loulseged, H., Kowis, C.R., Sneed, A.J., Martin, R.G., Muzny, D.M., Nanavati, A.N., Gibbs, R.A.

Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: <http://image.llnl.gov>
 Series: IRAK Plate: 29 Row: a Column: 12
 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 4557858.
 Method: conceptual translation.

FEATURES Location/Qualifiers

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ORIGIN

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☐ 1: [NP_001041](#). Reports somatostatin rece...[gi:4557859]

[BLink](#), [Conserved Domains](#), [Links](#)

Comment Features Sequence

LOCUS NP_001041 369 aa linear PRI 18-DEC-2005
DEFINITION somatostatin receptor 2 [Homo sapiens].
ACCESSION NP_001041
VERSION NP_001041.1 GI:4557859
DBSOURCE REFSEQ: accession [NM_001050.2](#)
KEYWORDS .
SOURCE Homo sapiens (human)
ORGANISM [Homo sapiens](#)
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Euarchontoglires; Primates; Catarrhini;
Hominidae; Homo.

REFERENCE 1 (residues 1 to 369)
AUTHORS Csaba,Z., Pirker,S., Lelouvier,B., Simon,A., Videau,C.,
Epelbaum,J., Czech,T., Baumgartner,C., Sperk,G. and Dournaud,P.
TITLE Somatostatin receptor type 2 undergoes plastic changes in the human
epileptic dentate gyrus
JOURNAL J. Neuropathol. Exp. Neurol. 64 (11), 956-969 (2005)
PUBMED [16254490](#)
REMARK GeneRIF: In the temporal lobe epilepsy, dentate gyrus, sst2
receptor mRNA expression was strongly increased in the granule cell
layer, sst2 receptor-binding sites and immunoreactivity was
preserved in the inner but decreased in the outer molecular layer.

REFERENCE 2 (residues 1 to 369)
AUTHORS Liu,A.M. and Wong,Y.H.
TITLE Activation of nuclear factor {kappa}B by somatostatin type 2
receptor in pancreatic acinar AR42J cells involves G{alpha}14 and
multiple signaling components: a mechanism requiring protein kinase
C, calmodulin-dependent kinase II, ERK, and c-Src
JOURNAL J. Biol. Chem. 280 (41), 34617-34625 (2005)
PUBMED [16115892](#)
REMARK GeneRIF: activation of the IKK/NFkappaB signaling cascade by SSTR2
requires a complicated network consisting of Galpha(14), protein
kinase C, CamkII, ERK, and c-Src

REFERENCE 3 (residues 1 to 369)
AUTHORS Filopanti,M., Ronchi,C., Ballare,E., Bondioni,S., Lania,A.G.,
Losa,M., Gelmini,S., Peri,A., Orlando,C., Beck-Peccoz,P. and
Spada,A.
TITLE Analysis of somatostatin receptors 2 and 5 polymorphisms in
patients with acromegaly
JOURNAL J. Clin. Endocrinol. Metab. 90 (8), 4824-4828 (2005)
PUBMED [15914528](#)
REMARK GeneRIF: SSTR2 and SSTR5 variants seem to have a minor role in

- determining the responsiveness to somatostatin analogs in acromegaly
- REFERENCE 4 (residues 1 to 369)
- AUTHORS Chen,L., Liu,Q., Qin,R., Le,H., Xia,R., Li,W. and Kumar,M.
- TITLE Amplification and functional characterization of MUC1 promoter and gene-virotherapy via a targeting adenoviral vector expressing hSSTR2 gene in MUC1-positive Panc-1 pancreatic cancer cells in vitro
- JOURNAL Int. J. Mol. Med. 15 (4), 617-626 (2005)
- PUBMED [15754023](#)
- REMARK GeneRIF: gene transfer into pancreatic neoplasm cells resulted in no apoptosis, but a significant cell proliferation inhibition
- REFERENCE 5 (residues 1 to 369)
- AUTHORS Grant,M., Collier,B. and Kumar,U.
- TITLE Agonist-dependent dissociation of human somatostatin receptor 2 dimers: a role in receptor trafficking
- JOURNAL J. Biol. Chem. 279 (35), 36179-36183 (2004)
- PUBMED [15231824](#)
- REMARK GeneRIF: human somatostatin receptor 2 dimers have a role in receptor trafficking
- REFERENCE 6 (residues 1 to 369)
- AUTHORS Kumar,M., Liu,Z.R., Thapa,L., Wang,D.Y., Tian,R. and Qin,R.Y.
- TITLE Mechanisms of inhibition of growth of human pancreatic carcinoma implanted in nude mice by somatostatin receptor subtype 2
- JOURNAL Pancreas 29 (2), 141-151 (2004)
- PUBMED [15257106](#)
- REMARK GeneRIF: Expression of the SSTR2 gene in pancreatic adenocarcinoma cells induces apoptosis, which may be mediated via down-regulation of Bcl-2 & up-regulation of Bax (alteration of Bcl-2/Bax ratio) & inhibits tumor angiogenesis, inhibiting of tumor growth.
- REFERENCE 7 (residues 1 to 369)
- AUTHORS Gugger,M., Waser,B., Kappeler,A., Schonbrunn,A. and Reubi,J.C.
- TITLE Immunohistochemical localization of somatostatin receptor sst2A in human gut and lung tissue: possible implications for physiology and carcinogenesis
- JOURNAL Ann. N. Y. Acad. Sci. 1014, 132-136 (2004)
- PUBMED [15153427](#)
- REMARK GeneRIF: Epithelial sst2A cells, identified as neuroendocrine, gastrin-producing cells, were found in large numbers in the antrum and the duodenum, but not in the gastric corpus.
- REFERENCE 8 (residues 1 to 369)
- AUTHORS Park,C., Yang,I., Woo,J., Kim,S., Kim,J., Kim,Y., Sohn,S., Kim,E., Lee,M., Park,H., Jung,J. and Park,S.
- TITLE Somatostatin (SRIF) receptor subtype 2 and 5 gene expression in growth hormone-secreting pituitary adenomas: the relationship with endogenous srif activity and response to octreotide
- JOURNAL Endocr. J. 51 (2), 227-236 (2004)
- PUBMED [15118275](#)
- REMARK GeneRIF: The degree (or level) of sst2 and sst5 expression is critical for the ultimate GH response of somatotropinomas to endogenous SRIF tone and exogenous SRIF analogue therapy.
- REFERENCE 9 (residues 1 to 369)
- AUTHORS Kumar,M., Liu,Z.R., Thapa,L., Chang,Q., Wang,D.Y. and Qin,R.Y.
- TITLE Antiangiogenic effect of somatostatin receptor subtype 2 on pancreatic cancer cell line: Inhibition of vascular endothelial growth factor and matrix metalloproteinase-2 expression in vitro
- JOURNAL World J. Gastroenterol. 10 (3), 393-399 (2004)
- PUBMED [14760765](#)
- REMARK GeneRIF: Expression of reintroduced human SSTR2 gene exerts its antiangiogenic effects by down-regulating expressions of factors

- involved in tumor angiogenesis and metastasis, suggesting SSTR2 gene transfer as new strategy of gene therapy for pancreatic cancer.
- REFERENCE 10 (residues 1 to 369)
 AUTHORS Qin,R.Y., Fang,R.L., Gupta,M.K., Liu,Z.R., Wang,D.Y., Chang,Q. and Chen,Y.B.
 TITLE Alteration of somatostatin receptor subtype 2 gene expression in pancreatic tumor angiogenesis
 JOURNAL World J. Gastroenterol. 10 (1), 132-135 (2004)
 PUBMED [14695784](#)
 REMARK GeneRIF: SST2R gene together with p53 and ras genes may participate in pancreatic cancerous angiogenesis.
- REFERENCE 11 (residues 1 to 369)
 AUTHORS Liu,Q., Reubi,J.C., Wang,Y., Knoll,B.J. and Schonbrunn,A.
 TITLE In vivo phosphorylation of the somatostatin 2A receptor in human tumors
 JOURNAL J. Clin. Endocrinol. Metab. 88 (12), 6073-6079 (2003)
 PUBMED [14671213](#)
 REMARK GeneRIF: The receptor from somatostatinoma was completely phosphorylated. Only unphosphorylated sst2A was present in human tumors not exposed to autocrine stimulation.
- REFERENCE 12 (residues 1 to 369)
 AUTHORS Bertherat,J., Tenenbaum,F., Perlemoine,K., Videau,C., Alberini,J.L., Richard,B., Dousset,B., Bertagna,X. and Epelbaum,J.
 TITLE Somatostatin receptors 2 and 5 are the major somatostatin receptors in insulinomas: an in vivo and in vitro study
 JOURNAL J. Clin. Endocrinol. Metab. 88 (11), 5353-5360 (2003)
 PUBMED [14602773](#)
 REMARK GeneRIF: Sst2 and sst5 were expressed in 70%, sst1 in 50%, and sst3 and sst4 subtypes only in 15-20% of insulinomas
- REFERENCE 13 (residues 1 to 369)
 AUTHORS Brunicardi,F.C., Atiya,A., Moldovan,S., Lee,T.C., Fagan,S.P., Kleinman,R.M., Adrian,T.E., Coy,D.H., Walsh,J.H. and Fisher,W.E.
 TITLE Activation of somatostatin receptor subtype 2 inhibits insulin secretion in the isolated perfused human pancreas
 JOURNAL Pancreas 27 (4), E84-E89 (2003)
 PUBMED [14576502](#)
 REMARK GeneRIF: Activation of SSTR 2 by SSTR 2 agonist significantly suppressed insulin secretion.
- REFERENCE 14 (residues 1 to 369)
 AUTHORS Celinski,S.A., Fisher,W.E., Amaya,F., Wu,Y.Q., Yao,Q., Youker,K.A. and Li,M.
 TITLE Somatostatin receptor gene transfer inhibits established pancreatic cancer xenografts
 JOURNAL J. Surg. Res. 115 (1), 41-47 (2003)
 PUBMED [14572771](#)
 REMARK GeneRIF: Expression of somatostatin receptor 2 by human pancreatic cancer causes significant slowing of tumor growth by a mechanism independent of exogenous somatostatin
- REFERENCE 15 (residues 1 to 369)
 AUTHORS Dalm,V.A., van Hagen,P.M., van Koetsveld,P.M., Achilefu,S., Houtsmuller,A.B., Pols,D.H., van der Lely,A.J., Lamberts,S.W. and Hofland,L.J.
 TITLE Expression of somatostatin, cortistatin, and somatostatin receptors in human monocytes, macrophages, and dendritic cells
 JOURNAL Am. J. Physiol. Endocrinol. Metab. 285 (2), E344-E353 (2003)
 PUBMED [12684217](#)
 REMARK GeneRIF: study demonstrates for the first time a selective and inducible expression of the recently discovered cortistatin, as well as somatostatin receptor 2, in human monocyte-derived cells

- REFERENCE 16 (residues 1 to 369)
AUTHORS Hashemi,S.H., Li,J.Y., Ahlman,H. and Dahlstrom,A.
TITLE SSR2(a) receptor expression and adrenergic/cholinergic characteristics in differentiated SH-SY5Y cells
JOURNAL Neurochem. Res. 28 (3-4), 449-460 (2003)
PUBMED [12675130](#)
REMARK GenerIF: Presence and intracellular localization of the spliced variant SSR2(a) and its endogenous ligand SS in the cultured human neuroblastoma (NB) cell line, SH-SY5Y.
- REFERENCE 17 (residues 1 to 369)
AUTHORS Guillermet,J., Saint-Laurent,N., Rochaix,P., Cuvillier,O., Levade,T., Schally,A.V., Pradayrol,L., Buscail,L., Susini,C. and Bousquet,C.
TITLE Somatostatin receptor subtype 2 sensitizes human pancreatic cancer cells to death ligand-induced apoptosis
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 100 (1), 155-160 (2003)
PUBMED [12490654](#)
REMARK GenerIF: sensitizes human pancreatic cancer cells to death ligand-induced apoptosis
- REFERENCE 18 (residues 1 to 369)
AUTHORS Pasquali,D., Notaro,A., Bonavolonta',G., Vassallo,P., Bellastella,A. and Sinisi,A.A.
TITLE Somatostatin receptor genes are expressed in lymphocytes from retroorbital tissues in Graves' disease
JOURNAL J. Clin. Endocrinol. Metab. 87 (11), 5125-5129 (2002)
PUBMED [12414882](#)
REMARK GenerIF: somatostatin receptor transcripts were found in lymphocytes both from Graves' ophthalmopathy retroorbital tissues and blood samples, with levels of expression of SST1, -2, and -4 mRNA higher than those of the SST3 and -5 transcripts
- REFERENCE 19 (residues 1 to 369)
AUTHORS Hansson,J., Bjartell,A., Gadaleanu,V., Dizeyi,N. and Abrahamsson,P.A.
TITLE Expression of somatostatin receptor subtypes 2 and 4 in human benign prostatic hyperplasia and prostatic cancer
JOURNAL Prostate 53 (1), 50-59 (2002)
PUBMED [12210479](#)
REMARK GenerIF: expression of SSTR2 transcripts up-regulated in prostatic carcinoma cells; SSTR2 agonists may have role in treatment of prostate cancer
- REFERENCE 20 (residues 1 to 369)
AUTHORS Dizeyi,N., Konrad,L., Bjartell,A., Wu,H., Gadaleanu,V., Hansson,J., Helboe,L. and Abrahamsson,P.A.
TITLE Localization and mRNA expression of somatostatin receptor subtypes in human prostatic tissue and prostate cancer cell lines
JOURNAL Urol. Oncol. 7 (3), 91-98 (2002)
PUBMED [12474541](#)
REMARK GenerIF: localization and expression in human prostatic tissue and prostate cancer cell lines
- REFERENCE 21 (residues 1 to 369)
AUTHORS Green,V.L., Richmond,I., Maguiness,S., Robinson,J., Helboe,L., Adams,I.P., Drummond,N.S. and Atkin,S.L.
TITLE Somatostatin receptor 2 expression in the human endometrium through the menstrual cycle
JOURNAL Clin. Endocrinol. (Oxf) 56 (5), 609-614 (2002)
PUBMED [12030911](#)
- REFERENCE 22 (residues 1 to 369)
AUTHORS Papotti,M., Bongiovanni,M., Volante,M., Allia,E., Landolfi,S., Helboe,L., Schindler,M., Cole,S.L. and Bussolati,G.
TITLE Expression of somatostatin receptor types 1-5 in 81 cases of

gastrointestinal and pancreatic endocrine tumors. A correlative immunohistochemical and reverse-transcriptase polymerase chain reaction analysis

JOURNAL Virchows Arch. 440 (5), 461-475 (2002)
PUBMED [12021920](#)
REMARK GenerIF: SSTRs 1-5 are heterogeneously expressed in gastroenteropancreatic endocrine tumors

REFERENCE 23 (residues 1 to 369)
AUTHORS Casini Raggi,C., Calabro,A., Renzi,D., Briganti,V., Cianchi,F., Messerini,L., Valanzano,R., Cameron Smith,M., Cortesini,C., Tonelli,F., Serio,M., Maggi,M. and Orlando,C.
TITLE Quantitative evaluation of somatostatin receptor subtype 2 expression in sporadic colorectal tumor and in the corresponding normal mucosa

JOURNAL Clin. Cancer Res. 8 (2), 419-427 (2002)
PUBMED [11839658](#)
REMARK GenerIF: Quantitative evaluation of somatostatin receptor subtype 2 expression in sporadic colorectal tumor and in the corresponding normal mucosa

REFERENCE 24 (residues 1 to 369)
AUTHORS Oomen,S.P., van Hennik,P.B., Antonissen,C., Lichtenauer-Kaligis,E.G., Hofland,L.J., Lamberts,S.W., Lowenberg,B. and Touw,I.P.
TITLE Somatostatin is a selective chemoattractant for primitive (CD34(+)) hematopoietic progenitor cells

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COMMENT REVIEWED [REFSEQ](#): This record has been curated by NCBI staff. The reference sequence was derived from [BC019610.1](#) and [BC000256.1](#).

Summary: Somatostatin acts at many sites to inhibit the release of many hormones and other secretory proteins. The biologic effects of somatostatin are probably mediated by a family of G protein-coupled receptors that are expressed in a tissue-specific manner. SSTR2 is a member of the superfamily of receptors having seven transmembrane segments and is expressed in highest levels in cerebrum and kidney.

FEATURES

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